

WHAT IS CLAIMED IS:

1. An isolated polynucleotide comprising a polynucleotide which is at least 70% identical to a member selected from the group consisting of:
  - (a) a polynucleotide encoding a polypeptide, or a biologically or immunologically active fragment thereof, comprising the amino acid sequence set forth in Figure 2 (SEQ ID NO: 2);
  - (b) a polynucleotide encoding a polypeptide comprising amino acid 21 to amino acid 331 as set forth in Figure 2 (SEQ ID NO: 2);
  - (c) a polynucleotide encoding a polypeptide comprising amino acid 27 to amino acid 331 as set forth in Figure 2 (SEQ ID NO: 2); and
  - (d) a polynucleotide which is complementary to the polynucleotide of (a), (b), or (c).
2. The polynucleotide of Claim 1 wherein the polynucleotide is DNA.
3. The polynucleotide of Claim 1 wherein the polynucleotide is RNA.
4. The polynucleotide of Claim 1 wherein the polynucleotide is genomic DNA.
5. The polynucleotide of Claim 2 wherein the polynucleotide encodes the polypeptide comprising amino acids 1 to 331 as set forth in Figure 2 (SEQ ID NO: 2).
6. The polynucleotide of Claim 2 wherein the polynucleotide encodes the polypeptide comprising amino acid 21 to amino acid 331 as set forth in Figure 2 (SEQ ID NO: 2).
7. The polynucleotide of Claim 2 wherein the polynucleotide encodes the polypeptide comprising amino acid 27 to amino acid 331 as set forth in Figure 2 (SEQ ID NO: 2).
8. The polynucleotide of Claim 1 wherein the polynucleotide comprises the sequence as set forth in Figure 1 (SEQ ID NO: 1) from nucleotide 1 to nucleotide 1770.
9. The polynucleotide of Claim 1 wherein the polynucleotide comprises the sequence as set forth in Figure 1 (SEQ ID NO: 1) from nucleotide 296 to nucleotide 1291.
10. The polynucleotide of Claim 1 wherein the polynucleotide comprises the sequence as set forth in Figure 1 (SEQ ID NO: 1) from nucleotide 356 to nucleotide 1291.

11. The polynucleotide of Claim 1 wherein the polynucleotide comprises the sequence as set forth in Figure 1 (SEQ ID NO: 1) from nucleotide 374 to nucleotide 1291.

12. A vector comprising the polynucleotide of Claim 2.

13. A host cell comprising the vector of Claim 12.

14. A method of producing a polypeptide comprising expressing from the host cell of Claim 13 the polypeptide encoded by the polynucleotide.

15. The method of Claim 14 wherein the polypeptide comprises amino acid 1 to amino acid 331 as set forth in Figure 2 (SEQ ID NO: 2).

16. The method of Claim 14 wherein the polypeptide comprises amino acid 21 to amino acid 331 as set forth in Figure 2 (SEQ ID NO: 2).

17. The method of Claim 14 wherein the polypeptide comprises amino acid 27 to amino acid 331 as set forth in Figure 2 (SEQ ID NO: 2).

18. A method of producing a polypeptide wherein the polypeptide comprises the amino acid sequence shown in Figure 2 (SEQ ID NO: 2), the method comprising the steps of:

- (a) culturing the host cell of Claim 13 under conditions whereby the polypeptide is expressed; and
- (b) recovering the polypeptide from the culture.

19. A method for producing a cell which expresses a polypeptide comprising genetically engineering the cell with the vector of Claim 12.

20. A polypeptide comprising a member selected from the group consisting of:

- (a) a polypeptide, or a biologically or immunologically active fragment thereof, comprising the amino acid sequence as set forth in Figure 2 (SEQ ID NO: 2);
- (b) a polypeptide comprising amino acid 21 to amino acid 331 as set forth in Figure 2 (SEQ ID NO: 2);
- (c) a polypeptide comprising amino acid 27 to amino acid 331 as set forth in Figure 2 (SEQ ID NO: 2);
- (d) a polypeptide comprising amino acid 28 to amino acid 46 as set forth in Figure 2 (SEQ ID NO: 2);
- (e) a polypeptide comprising amino acid 77 to amino acid 91 as set forth in Figure 2 (SEQ

ID NO: 2); and

- (f) a polypeptide which is at least 70% identical to the polypeptide of (a), (b), (c), (d), or (e).

21. The polypeptide of Claim 20 wherein the polypeptide comprises amino acids 1 to 331 as set forth in Figure 2 (SEQ ID NO: 2).

22. The polypeptide of Claim 20 wherein the polypeptide comprises amino acids 21 to 331 as set forth in Figure 2 (SEQ ID NO: 2).

23. The polypeptide of Claim 20 wherein the polypeptide comprises amino acids 27 to 331 as set forth in Figure 2 (SEQ ID NO: 2).

24. An isolated antibody, or antibody fragment, which specifically binds to a polypeptide comprising a member selected from the group consisting of:

(a) a polypeptide, or a biologically or immunologically active fragment thereof, comprising the amino acid sequence as set forth in Figure 2 (SEQ ID NO: 2);

(b) a polypeptide comprising amino acid 28 to amino acid 46 as set forth in Figure 2 (SEQ ID NO: 2);

(c) a polypeptide comprising amino acid 77 to amino acid 91 as set forth in Figure 2 (SEQ ID NO: 2);

(d) a polypeptide comprising amino acid 188 to amino acid 210 as set forth in Figure 2 (SEQ ID NO: 2);

(e) a polypeptide comprising amino acid 263 to amino acid 274 as set forth in Figure 2 (SEQ ID NO: 2); and

- (f) a polypeptide which is at least 70% identical to the polypeptide of (a), (b), (c), (d), or (e).

25. The antibody of Claim 24, wherein the antibody specifically binds to the amino acid sequence PLGGESICSAGAPAKYSIT (SEQ ID NO: 8).

26. The antibody of Claim 24, wherein the antibody specifically binds to the amino acid sequence HSSDYSMWRKNQYVS (SEQ ID NO: 10).

27. The antibody of Claim 24, wherein the antibody specifically binds to the amino acid sequence DAGTDSGFTFSSPNFATIPQDTV (SEQ ID NO: 11).

28. The antibody of Claim 24, wherein the antibody specifically binds to the amino acid sequence NEIVDSASVPET (SEQ ID NO: 12).

29. The antibody of Claim 24, wherein the antibody is a polyclonal antibody.
30. The antibody of Claim 24, wherein the antibody is a monoclonal antibody.
31. An immunoconjugate comprising an isolated antibody, or antibody fragment, which specifically binds to a polypeptide comprising a member selected from the group consisting of:
  - (a) a polypeptide, or a biologically or immunologically active fragment thereof, comprising the amino acid sequence as set forth in Figure 2 (SEQ ID NO: 2);
  - (b) a polypeptide comprising amino acid 21 to amino acid 331 as set forth in Figure 2 (SEQ ID NO: 2);
  - (c) a polypeptide comprising amino acid 27 to amino acid 331 as set forth in Figure 2 (SEQ ID NO: 2);
  - (d) a polypeptide comprising amino acid 28 to amino acid 46 as set forth in Figure 2 (SEQ ID NO: 2);
  - (e) a polypeptide comprising amino acid 77 to amino acid 91 as set forth in Figure 2 (SEQ ID NO: 2);
  - (f) a polypeptide comprising amino acid 188 to amino acid 210 as set forth in Figure 2 (SEQ ID NO: 2);
  - (g) a polypeptide comprising amino acid 263 to amino acid 274 as set forth in Figure 2 (SEQ ID NO: 2); and
  - (h) a polypeptide which is at least 70% identical to the polypeptide of (a), (b), (c), (d), (e), (f), or (g)  
conjugated to a therapeutic agent.
32. The immunoconjugate of Claim 31, wherein the therapeutic agent is a cytotoxic agent.
33. The immunoconjugate of Claim 32, wherein the cytotoxic agent is selected from the group consisting of ricin, doxorubicin, daunorubicin, taxol, ethidium bromide, mitomycin, etoposied, tenoposide, vincristine, vinblastine, colchicine, dihydroxy anthracin dione, actinomycin D, diphteria toxin, *Pseudomonas* exotoxin (PE) A, PE40, ricin, abrin, glucocorticoid and radioisotopes.
34. The immunoconjugate of Claim 31, wherein the antibody fragments are selected from the group consisting of Fv, F(ab') and F(ab')<sub>2</sub> fragments.
35. A method for selectively destroying a cell expressing the polypeptide of Figure 2 (SEQ ID NO: 2) comprising reacting the immunoconjugate of Claim 31 with the cell so that the therapeutic agent of the immunoconjugate can destroy the cell.

36. A method of treating a disease-state in a human patient which disease-state is associated with expression of RG1 and wherein the method comprises administering to the patient a therapeutically effective amount of the immunoconjugate of Claim 31.

37. A method of treating a disease-state in a human patient which disease-state is associated with inappropriate expression of RG1 and wherein the patient is in need of decreased levels of a polypeptide comprising a member selected from the group consisting of:

- (a) a polypeptide, or a biologically or immunologically active fragment thereof, comprising the amino acid sequence as set forth in Figure 2 (SEQ ID NO: 2); and
- (b) a polypeptide which is at least 70% identical to the polypeptide of (a) and wherein the method comprises administering to the patient a therapeutically effective amount of a ribozyme which specifically cleaves RNA encoding the polypeptide.

38. A method of treating a disease-state in a human patient which disease-state is associated with inappropriate expression of RG1 and wherein the patient is in need of decreased levels of a polypeptide having the amino acid sequence as set forth in Figure 2 (SEQ ID NO: 2); wherein the method comprises administering to the patient a therapeutically effective amount of a polynucleotide which is complementary to a polynucleotide encoding the polypeptide or a portion thereof.

39. A diagnostic method wherein the method comprises analyzing a sample derived from a host for the presence of a polypeptide comprising a member selected from the group consisting of:

- (a) a polypeptide, or a biologically or immunologically active fragment thereof, comprising the amino acid sequence as set forth in Figure 2 (SEQ ID NO: 2);
- (b) a polypeptide comprising amino acid 21 to amino acid 331 as set forth in Figure 2 (SEQ ID NO: 2);
- (c) a polypeptide comprising amino acid 27 to amino acid 331 as set forth in Figure 2 (SEQ ID NO: 2);
- (d) a polypeptide comprising amino acid 28 to amino acid 46 as set forth in Figure 2 (SEQ ID NO: 2);
- (e) a polypeptide comprising amino acid 77 to amino acid 91 as set forth in Figure 2 (SEQ ID NO: 2);
- (f) a polypeptide comprising amino acid 188 to amino acid 210 as set forth in Figure 2 (SEQ ID NO: 2);
- (g) a polypeptide comprising amino acid 263 to amino acid 274 as set forth in Figure 2 (SEQ ID NO: 2); and
- (h) a polypeptide which is at least 70% identical to the polypeptide of (a), (b), (c), (d), (e), (f), or (g).

40. The method of Claim 39, wherein analyzing comprises contacting the sample with the antibody or antibody fragment of Claim 24, which specifically binds to the polypeptide and detecting binding of the antibody to the polypeptide in the sample.

41. A diagnostic method wherein the method comprises analyzing for the presence of a polynucleotide comprising a polynucleotide which is at least 70% identical to a member selected from the group consisting of:

- (a) a polynucleotide encoding a polypeptide, or a biologically or immunologically active fragment thereof, comprising the amino acid sequence set forth in Figure 2 (SEQ ID NO: 2); and
- (b) polynucleotide which is complementary to the polynucleotide of (a).

42. A method for diagnosing in a subject a metastasis associated with the polypeptide of Figure 2 (SEQ ID NO: 2) comprising:

- (a) obtaining from the subject a tissue and/or fluid sample;
- (b) contacting the sample with the antibody of Claim 24; and
- (c) detecting the binding of the antibody with the polypeptide in the sample.

43. The method of Claim 42, wherein the antibody is labeled so as to directly or indirectly produce a detectable signal with a compound selected from the group consisting of a radiolabel, an enzyme, a chromophore and a fluorescer.